AYURVEDIC HERBAL SOFT DRINK

TECHNICAL FIELD

The present invention relates to the development of health protective herbal soft drink.

BACKGROUND ART

Diet or food therapy is emerging as the latest trend in health care programme. It is now said that there will be more dieticians than physician in the present century as many diseases can be prevented if the right kind of diet is prescribed. Herbs into our lives in an ongoing way, it is easier to modify an existing habit than to create a new one. Consumption of the right kind of food articles and drinks suited to the climate, age and constitutional, natures of the individuals are getting greater scientific security and attention. The rich and diverse traditional diet practices prevalent among various communities with the regional variations are now found to health protective/promoting. Over 1000 different kinds of alcoholic drinks, soft drinks, beverages and medicinal drinks are traditionally consumed in India. But unfortunately with the introduction of various exotic drinks many of the local drinks, which are mostly plant based, are fast disappearing and some of them almost forgotten. Acknowledging this truth The inventors undertook a critical study of many of such drink and with the modern scientific understanding of beverages have designed herbal soft drink. This drink is fortified with many health protective and promotive attributes such as hepatoprotective, anti-oxidant and immuno-enhancing, besides providing instant energy and vitality. These properties have been authenticated / validated through appropriate pharmacological investigations and clinical studies. The drink is diuretic and has cooling effect like other soft drinks of summer. The result will be a boon to consumers, in terms of herbal alternatives and availability.

Reference is made to *Bhaishjya Ratnavali / Vatvyadhiyadhikar* for "*Sida cordifolia*" as major ingredient of "*Balarishta*" with eleven other ingredients including jaggery as base for fermentation, *Elettaria cardamomum, Withania somnifera,* and *Woodfordia fruticosa*, recommended for treatment of neurogenic disorder, an ideal restorative.

The reference is made to the classical text book of Ayurveda *"Charak Samhita" Sutrasthan* Chapt-4 wherein *Sida* sps. is used for *Vrinhaneeya* and *Balya* properties *i.e.* it nourishes the body tissue and increases the body weight and acts as tonic.

The reference in made to the book *Dhanvantari Nighantoo* wherein *Sida* sps. described for *Varishyam, Balyam, Raktapittam Kshayam Hanti, Bala ojavardhyatiyapi,* which means that it is Aphrodisiac, tonic, anti-bleeding disorder, improve vitality and immunity.

The reference is made to the book "Bhav Prakash Nighantoo" wherein *Sida sps.* is considered as Bal-Kantikarit, i.e. improves vitality and lusture.

Reference is made to classical Ayurvedic text of "*Laghutrayi*" – *Sharangdhar Samhita/ Madhyam Khand/* Chapt – 10 for "*Vitis vinifera*", which is used as major ingredient of "*Draksharishta*" with ten minor ingredients including jaggery as base for fermentation, *Elettaria cardamomum, Cinnamomum* and *Woodfordia fruticosa*, indicated for "Urahkshat" *i.e.* phthisis (an advance stage of pulmonary tuberculosis)

Reference is made to US patent 6375992 wherein a composition for hydrating mammalian skin comprises red grape extract.

Reference is made to classical text of Ayurvedic formulation – *Bhaishjya Ratanavali/ Murchcha Rogadhikar* for "***Withania somnifera***", which is major ingredient of "*Aswagandharishta*" with twenty-eight other ingredients including jaggery as base for fermentation, *Elettaria cardamomum, Cinnamomum, Glycyrrhiza glabra* and *Woodfordia fruticosa*, and indicated for general debility and weakness, relieving tension and anxiety.

Reference is made of website http://www.globalnutrients.net/herbal_powders_ information.htm wherein *Withania somnifera* is one of the most widespread tranquilizes used in India, where it hold a position of importance similar to ginseng in China. It acts mainly on the reproductive and nervous systems, having a rejuvenative effect on the body, and is used to improve vitality and aid recovery after chronic illness.

Reference is made to *Bhaishjya Ratnavali / Shoth Rogadhikar* for "*Boerhaavia diffusa*" used as major ingredient of "*Punarnavarishta*" with seventeen other ingredients including jaggery as base for fermentation, *Sida cordifolia, Tinospora cordifolia* and *Woodfordia fruticosa*, used for diuretic activity indicated in the treatment of oedema and ascites.

Reference is made to website http://www.drlindaberry.com/products/metagenics/mics.htm wherein herbal formulation Liv. 52™ for liver disorders contains *Phyllanthus niruri/ P. amarus, Boerhaavia diffusa* and *Tinospora cordifolia* along with some other medicinal plants.

Reference is made to *Bhaishjya Ratnavali / Jwaradhikar* for "*Tinospora cordifolia*" used as major ingredient of "*Amritarishta*" with thirteen other ingredients including jaggery as base for fermentation, *Elettaria cardamomum, Cinnamomum* and *Woodfordia fruticosa*, indicated for treatment of fever and peripheral neuritis.

Reference is made to website http://www.herbpatch.com/herbs&7.htm wherein *Tinospora cordifolia* along with some other medicinal plants used in a formulation an Ayurvedic formulation SKN – AV , to restore the body to balanced state will being, the skin in particular.

Reference is made to US 5886029 wherein a medicinal composition for treatment of diabetes comprises *Tinospora cordifolia* and *cinnamomum tamala* along with some other ingredients.

Reference is made to US patent 6,136,316 wherein a hepatoprotetive composition for treating acute hepatitis B and E virus infection comprises *Phyllanthus amarus, Tinospora cordifoia* and *Boerhavia diffusa*.

Reference is made to US Patent 5693327 for the treatment of skin disorders at least one wherein a herbal composition for the treatment of skin disorders comprises of at least one plant from *Tinospora cordifolia, Glycyrrhiza glabra* and *Phyllanthus emblica* along with some other listed plants

An Ayurvedic composition for the prophylaxis and treatment of AIDS, flu, TB, hepatitis and other immuno-deficiancies comprises of *Tinospora cordifolia, Phyllanthus nirurii, phyllanthus emblica* along with some other plant ingredients.

Reference is made to US patent 5683698 wherein a formulation for alleviating symptoms associated with arthritis comprises of *Tinospora cordifolia* and *Withania somnifera* along with some other ingredients.

Reference is made to US Patent 6,153,198 wherein an alcoholic extract *Withania somnifera* produces a cognition effect and learning facility for the user.

Reference is made to US patent 5,494,668 wherein a composition for treating musculoskeletal disease such as rheumatoid arthritis and osteoarthritis comprises of extracts of Aswagandha-*withania somnifera* along with some other plant material extracts.

Reference is made to website http://www.holistichealthplus.com/HT/hepatitis.htm wherein herbs with powerful liver protective properties, adding in detoxification and promoting bile production and flow, as well as nourishing and repairing liver tissue.

OBJECTS OF THE INVENTION

The primary objective of the invention is to invent an immuno-enhancing, anti-oxidant, hepatoprotective, anti -fatigue, anti-stress herbal soft drink.

Another objective of the invention is that the herbal health drink gives instant energy and combat fatigue.

Yet another objective of the present invention is to produce the herbal health drink with some commonly available Indian medicinal herb.

Still another objective of the invention is that the herbal health drink possesses all the advantages of soft drink and none of its disadvantages.

Another objective of the present invention is the development of jaggery based herbal soft drink having, powerful antioxidant, immunomodulator, hepatoprotective and diuretic properties.

SUMMARY OF THE INVENTION

The invention provides a novel herbal soft drink comprising decoction of plants selected from *Sida sps.*, *Vitis vinifera*, *Withania somnifera*, *Boerhaavia diffusa* and *Tinospora cordifolia* for the protection and prevention of health and in particular, but not exclusively with antioxidant, immunoenhancing, hepatoprotective, cardiotonic, diuretic, digestive, choleretic, nervine relaxant properties.

DETAILED DESCRIPTION OF THE INVENTION

The present invention provides a herbal soft drink comprising of: a concentrated herbal extract obtained from a mixture of herbs selected from *Sida sps.*, *Boerhaavia diffusa, Vitis vinifera, Tinospora cordifolia* and *Withania somnifera* along with jaggery, a fermenting agent and carbonated water.

In an embodiment of the present invention, the percentage ratio of *Sita sps.*: *Boerhaavia diffusa*: *Vitis vinifera*: *Tinospora cordifolia*: *Withania somnifera* in the powdered mixture is in the range of 15 to 20: 5 to 10: 15 to 20: 5 to 10: 5 to 10.

In another embodiment of the present invention, the w/w ratio of the jaggery: concentrated herbal extract is in the range of 1:3 to 1:4.

In yet another embodiment of the present invention, the fermenting agent used is Sacromyces strain and flowers of *Woodfordia fructose.*

In still another embodiment of the present invention, the percentage ratio of fermenting agent added is in the range of 4 to 16.

In one more embodiment of the present invention, the w/w ratio of carbonated water: the mixture of the concentrated extract, jaggery and the fermenting agent is in the range of 1:3 to 1:5.

In one another embodiment of the present invention, the soft drink provides antioxidant, hepatoprotective, cardio-tonic, diuretic, digestive, choleretic, nervine relaxant and immuno-enhancing properties.

In a further embodiment of the present invention, total solids content in the soft drink ranges from 30-40%.

The present invention also provides a process for preparing the herbal soft drink having antioxidant, hepatoprotective, cardio-tonic, diuretic, digestive, choleretic, nervine relaxant and immuno-enhancing properties, the said process comprising the steps of:

(a) obtaining plant parts of *Phyllanthus sps.*, *Glycyrrhiza glabra, Boerhaavia diffusa, Vitis vinifera, Tinospora cordifolia* and *Withania somnifera*;

(b) crushing the plant parts and mixing them to obtain a powdered mixture;

(c) adding water to the powdered mixture of step (b) to obtain an aqueous extract;

(d) concentrating the aqueous extract of step (c);

(e) filtering the concentrated extract of step (d);

(f) mixing jaggery to the filtered extract of step (e);

(g) adding Sacromyces strain and a fermenting agents to the mixture of step (f);

(h) fermenting the mixture of step (g) for a time period ranging between 3 to 6 days;

(i) filtering the fermented mixture of step (h);

(j) concentrating the fermented filtrate of step (i) to obtain a stock solution, and

(k) mixing the stock solution of step (j) with carbonated water in the w/w ratio of 1:3 to 1:5 to obtain the herbal soft drink.

In an embodiment of the present invention, the plant parts used are selected from the group consisting of leaf, stem, root, fruits and whole plant.

In another embodiment of the present invention wherein in step (b), the percentage ratio of *Sita sps.*: *Boerhaavia diffusa*: *Vitis vinifera*: *Tinospora cordifolia*: *Withania somnifera* in the powdered mixture is in the range of 15 to 20: 5 to 10: 15 to 20: 5 to 10: 5 to 10.

In yet another embodiment of the present invention wherein in step (c), the w/w ratio of water added to the powdered mixture is in the range of 5:1 to 10:1.

In still another embodiment of the present invention wherein in step (d), the aqueous extract is concentrated to 1/3 to 1/4 of its original volume.

In one more embodiment of the present invention wherein in step (f), the w/w ratio of the jaggery: filtered extract is in the range of 1:3 to 1:4.

In one another embodiment of the present invention wherein in step (g), the fermenting agent used is selected from Sacromyces strain and flowers of *Woodfordia fructose*.

In a further embodiment of the present invention wherein in step (j), the fermented filtrate is concentrated to 4/5 to 1/5 of its original volume.

In an embodiment of the present invention, there is provided a herbal soft drink for quenching thirst and cooling effect.

In another embodiment of the present invention there is provided herbal soft drink the composition further comprises *Phyllanthus sps. Glycyrrhiza glabra* for hepatoprotective activity.

In yet another embodiment of the present invention, there is provided herbal soft drink the composition comprises *Glycyrrhiza glabra* for improving gastro-intestinal conditions under stress.

In still another embodiment of the present invention, there is provided herbal soft drink the composition is comprises *Cinnamomum sps.* to improve aroma.

In one more embodiment of the present invention, plants used have anti-oxidant property.

In one another embodiment of the present invention, plants used have hepatoprotective property.

In an embodiment of the present invention, plants used have anxiolytic property.

In another embodiment of the present invention, plants used have no cardiovascular toxicity.

In still another embodiment of the present invention, plants used have diuretic property.

In yet another embodiment of the present invention, plants used are non-toxic.

BRIEF DESCRIPTION OF THE TABLES

Table 1: provides the SOD activity in brain of animals treated with herbal preparations C1 and C2 (n=5).

Table2: Rate of TBARS formation in brain of rats treated with herbal praperations C1 and C2(n=5).

Table 3: Level of TBARS formation after *invitro* supplementation of C1 and C2 to rat brain homopgenate.

Table 4: SOD mimetic activity in vitro in the herbal preparations C1 and C2.

Table 5: The table illustrates some of the properties found to be associated with the plant used in the present invention.

EXAMPLE-1

Sida sps.	-	15%
Boerhaavia diffusa	-	10%
Vitis vinifera	-	15%
Tinospora cordifolia	-	5%
Withania somnifera	-	5%
Woodfordia fruticosa	-	5%
Jaggery	-	34%
Water	-	q. s. to make 100 ml decoction

EXAMPLE-2

Sida sps.	-	18%
Boerhaavia diffusa	-	8%
Vitis vinifera	-	20%
Tinospora cordifolia	-	5%

Withania somnifera	-	10%
Woodfordia fruticosa	-	5%
Jaggery	-	30%
Water	-	q. s. to make 100 ml decoction

EXAMPLE-3

Sida sps.	-	20%
Boerhaavia diffusa	-	5%
Vitis vinifera	-	15%
Tinospora cordifolia	-	6%
Withania somnifera	-	5%
Woodfordia fruticosa	-	5%
Jaggery	-	40%
Water	-	q. s. to make 100 ml decoction

EXAMPLE-4

Sida sps.	-	18%
Boerhaavia diffusa	-	10%
Vitis vinifera	-	20%
Tinospora cordifolia	-	6%
Withania somnifera	-	7%
Woodfordia fruticosa	-	10%
Jaggery	-	35%
Water	-	q. s. to make 100 ml decoction

EXAMPLE-5

Sida sps.	-	20%
Boerhaavia diffusa	-	10%
Vitis vinifera	-	20%
Tinospora cordifolia	-	5%
Withania somnifera	-	5%
Woodfordia fruticosa	-	5%
Jaggery	-	30%
Water	-	q. s. to make 100 ml decoction

EXAMPLE-6

Sida sps.	-	18%
Boerhaavia diffusa	-	10%
Vitis vinifera	-	20%
Tinospora cordifolia	-	5%
Withania somnifera	-	5%
Woodfordia fruticosa	-	10%
Jaggery	-	30%

Water - q. s. to make 100 ml decoction

EXAMPLE-7

Sida sps. - 15%
Boerhaavia diffusa - 5%
Vitis vinifera - 15%
Tinospora cordifolia - 5%
Withania somnifera - 5%
Woodfordia fruticosa - 5%
Jaggery - 30%
Water - q. s. to make 100 ml decoction

EXAMPLE-8

Sida sps. - 15%
Boerhaavia diffusa - 5%
Vitis vinifera - 20%
Tinospora cordifolia - 8%
Withania somnifera - 8%
Woodfordia fruticosa - 8%
Jaggery - 30%
Water - q. s. to make 100 ml decoction

Table 1: SOD activity in brain of animals treated with herbal preparations C1 and C2 (n=5)

Type of treatment	Treatment group	Parameter studied		
		SOD activity units/ml	Protein mg/ml	Specific activity Units/mg protien
7 days oral treatment	Control	8.46±0.67	3.39±0.26	2.49±0.23
	C1	6.50±0.70	3.14±0.10	2.05±0.19
30 days oral treatment	Control	9.52±0.95	3.56±0.33	2.65±0.59
	C1	6.89±1.4	4.65±0.39	1.50±0.42

Table 2: Rate of TBARS formation in brain of rats treated with herbal praperations C1 and C2 (n=5)

Type of treatment	Treatment group	Parameter studied		
		nm MDA/mg protein at 0 minutes	nm MDA/mg protein at 60 minutes	Rate of MDA formation nM MDA/ mg protein/hr
7 days oral treatment	Control	1.35±0.46	2.50±0.55	1.26±0.14
	C1	1.70±0.39	3.03±0.49	1.33±0.11
30 days oral	Control	2.08±1.18	2.43±1.19	0.435±0.11

treatment	C1	1.27±0.07	1.84±0.23	0.44±0.14

Table 3: Level of TBARS formation after *invitro* supplementation of C1 and C2 to rat brain homopgenate

S.NO	Supplementation to basal system.	nM MDA/mg protein at 0 minutes	nM MDA/mg protein at 60 minutes	Rate of MDA formation
1.	Control 1	0.988	2.071	1.083
3.	50µl C1	1.142	1.193	0.051
4.	100µl C1	1.389	1.346	Nil(-0.04)

Table 4: SOD mimetic activity in vitro in the herbal preparations C1 and C2

S.No	Sample	SOD mimetic activity units /ml
1.	C1	22.69

Conclusion

Herbal preparation showed SOD Mimetic activity *in vitro* and radical quenching capacity as can be seen from no change in MDA levels in the presence of this preparation. *In vitro* also this preparation was found to have antioxidant potential.

Note: SOD: Super oxide dismutase; TBARS: Thiobarbituric reactive substances and MDA: Malondialdehyde

Table 5: The table illustrates some of the properties found to be associated with the plant used in the present invention

S. No.	Plant name (Vernacular name)	Family	Chemical constituents	Properties
1.	*Sida spp.* (Bala)	Malvaceae	Alkaloids, ephedrine, fatty oil, seroids, phytosterol, resin, recin acid, potassium nitrate and mucin.	Demulcent, laxative, as refrigerant in fever, used against dysentery, for poulticing ulcers, emollient, diuretic, astringent, tonic, given in urinary

				diseases, bilious disorders and gonorrhoea, used in cystitis, strangury, haematuria and in nervous disorders.
2.	*Boerhaavia diffusa* (Punarnava)	Nyctaginaceae	Quinolizidine alkaloids, punarnavine 1&2, fatty oil, potassium salts, hypoxanthine-9-L-arabinofuranoside, oxalates, myricyl alcohol, myristic acid, D-glucose,a polysaccharide and punarnavoside,	Diuretic, anti-inflammatory, for treatment of inflammatory renal diseases like nephrotic syndrome, oedema and ascites resulting from cirrhosis of the liver and chronic peritonitis, efficacious in abdominal tumors and cancer, antibacterial, cardiotonic.
3.	*Vitis vinifera* (Draksha)	Vitaceae	Leucoanthocyanins, sugars, acids and phenolics, iron, bromide, iodide and fluoride, vitamins, carotene, thiamine, riboflavin, niacin, vitamin C, pyridoxine, pantothenic acid, folic acid, biotin, inositol, bioflavinoids, carbohydrate, amino acids. tartaric andmalic acids.	Stomachic, diuretic, demulcent and cooling, laxative, and expectorant.
4.	*Tinospora cordifolia* (Giloe)	Menispermaceae	Glucoside, alkaloidal constituents (including berberine), bitter glucoside giloin, giloinin, gilo-sterol, tinosporon, tinosporic acid and tinosporol, starch, calcium, phosphorus.	Antiperiodic, antispasmodic, anti-inflammatory and antipyretic, for gout, as liniment in erysipelas, ulcers, as tonic, in the treatment of jaundice , rheumatism and leprosy, has favorable effect on endogenous insulin secretion, glucose uptake and inhibition of peripheral glucose release,
5.	*Withania*	Solanaceae	Maltose, steroidal lactones-	Hypotensive,

	somnifera (Asawagandha)		withanolides,, withaferin A, withanone, cuscohygrine, anahygrine, tropine, pseudotropine, anaferine, *isopelletierine*, 3-tropyltigloate, nicotine, withasomine, visamine,	bradycardiac, respiratory-stimulating action, relaxant and antispasmodic effects against several spasmogens on intestinal, uterine, bronchial, treacheal and blood-vascular muscles. inflammatory conditions, ulcers and scabies.

ADVANTAGES OF THE PRESENT INVENTION

1. Soft drink is purely herbal.
2. Soft drink for the protection and prevention of health and in particular, but not exclusively with antioxidant, immunoenhancing, hepatoprotective, cardiotonic, diuretic, digestive, choleretic, nervine relaxant properties.
3. Soft drink gives instant energy and combat fatigue.
4. The soft drink comprising two or more plants decoction selected from *Sida sps., Vitis vinifera, Withania somnifera, Boerhaavia diffusa* and *Tinospora cordifolia.*
5. Soft drink developed is non-toxic.
6. No chemical preservative or colourants are used in this soft drink.
7. Soft drink is a good source of iron.

Claims:

1. A herbal soft drink comprising of: a concentrated herbal extract obtained from a mixture of herbs selected from *Sida sps.*, *Boerhaavia diffusa, Vitis vinifera, Tinospora cordifolia* and *Withania somnifera* along with jaggery, a fermenting agent and carbonated water.

2. The herbal soft drink as claimed in claim 1, wherein the percentage ratio of *Sida sps.*: *Boerhaavia diffusa*: *Vitis vinifera*: *Tinospora cordifolia*: *Withania somnifera* in the powdered mixture is in the range of 15 to 20: 5 to 10: 15 to 20: 5 to 10: 5 to 10.

3. The herbal soft drink as claimed in claim 1, wherein the w/w ratio of the jaggery: concentrated herbal extract is in the range of 1:3 to 1:4.

4. The herbal soft drink as claimed in claim 1, wherein the fermenting agent used is Sacromyces strain and flowers of *Woodfordia fructose.*

5. The herbal soft drink as claimed in claim 4, wherein the percentage ratio of fermenting agent added is in the range of 4 to 16.

6. The herbal soft drink as claimed in claim 1, wherein the w/w ratio of carbonated water: the mixture of the concentrated extract, jaggery, and the fermenting agent is in the range of 1:3 to 1:5.

7. The herbal soft drink as claimed in claim 1, wherein the soft drink provides antioxidant, hepatoprotective, cardio-tonic, diuretic, digestive, choleretic, nervine relaxant and immuno-enhancing properties.

8. The herbal soft drink as claimed in claim 1, wherein total solids content in the soft drink ranges from 30-40%.

9. A process for preparing the herbal soft drink having antioxidant, hepatoprotective, cardio-tonic, diuretic, digestive, choleretic, nervine relaxant and immuno-enhancing properties, the said process comprising the steps of:

(a) obtaining plant parts of *Phyllanthus sps., Glycyrrhiza glabra, Boerhaavia diffusa, Vitis vinifera, Tinospora cordifolia* and *Withania somnifera*;

(b) crushing the plant parts and mixing them to obtain a powdered mixture;

(c) adding water to the powdered mixture of step (b) to obtain an aqueous extract;

(d) concentrating the aqueous extract of step (c);

(e) filtering the concentrated extract of step (d);

(f) mixing jaggery to the filtered extract of step (e);

(g) adding Sacromyces strain and a fermenting agents to the mixture of step (f);

(h) fermenting the mixture of step (g) for a time period ranging between 3 to 6 days;

(i) filtering the fermented mixture of step (h);

(j) concentrating the fermented filtrate of step (i) to obtain a stock solution, and

(k) mixing the stock solution of step (j) with carbonated water in the w/w ratio of 1:3 to 1:5 to obtain the herbal soft drink

10. The process claimed in claim 10, wherein the plant parts used are selected from the group consisting of leaf, stem, root, fruits and whole plant.

11. The process claimed in claim 10 wherein in step (b), the percentage ratio of *Sita sps.*: *Boerhaavia diffusa*: *Vitis vinifera*: *Tinospora cordifolia*: *Withania somnifera* in the powdered mixture is in the range of 15 to 20: 5 to 10: 15 to 20: 5 to 10: 5 to 10.

12. The process claimed in claim 10 wherein in step (c), the w/w ratio of water added to the powdered mixture is in the range of 5:1 to 10:1.

13. The process claimed in claim 10 wherein in step (d), the aqueous extract is concentrated to 1/3 to 1/4 of its original volume.

14. The process claimed in claim 10 wherein in step (f), the w/w ratio of the jaggery: filtered extract is in the range of 1:3 to 1:4.

15. The process claimed in claim 10 wherein in step (j), the fermenting agent used is selected from Sacromyces strain and flowers of *Woodfordia fructose*.

16. The process claimed in claim 10 wherein in step (i), the fermented filtrate is concentrated to 4/5 to 1/5 of its original volume.

Abstract

The invention provides a novel herbal soft drink comprising decoction of plants selected from *Sida sps.*, *Vitis vinifera*, *Withania somnifera*, *Boerhaavia diffusa* and *Tinospora cordifolia* for the protection and prevention of health and in particular, but not exclusively with antioxidant, immunoenhancing, hepatoprotective, cardiotonic, diuretic, digestive, choleretic, nervine relaxant properties.

INTERNATIONAL SEARCH REPORT

Inter l Application No
PCT/IB 02/05558

A. CLASSIFICATION OF SUBJECT MA
IPC 7 A61K35/78

COPY

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ, EMBASE, BIOSIS, PASCAL, CHEM ABS Data, CANCERLIT, SCISEARCH

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2002/025349 A1 (KATIYAR CHANDRAKANT ET AL) 28 February 2002 (2002-02-28) page 2, paragraphs 24-28	1-16
Y	WO 98 05346 A (CHAVALI SAMBASIVA R ;FORSE R ARMOUR (US); BETH ISRAEL HOSPITAL (US) 12 February 1998 (1998-02-12) page 3, line 1 - line 20; claims 1,6	1-16
E	WO 03 017784 A (PRAKASH DHAN ;COUNCIL SCIENT IND RES (IN); PUSHPANGADAN PALPU (IN)) 6 March 2003 (2003-03-06) the whole document	1-16
A	GB 2 314 270 A (M S RAPTAKOS BRETT & CO LTD) 24 December 1997 (1997-12-24) claims 1,2	1-8

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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier document but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
14 May 2003	28/05/2003

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Leutner, S

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Inte al Application No
PCT/IB 02/05558

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with ion,where appropriate, of the relevant passages	Relevant to claim No.
A	NAGASHAYANA N ET AL: "Association of L-DOPA with recovery following Ayurveda medication in Parkinson's disease." JOURNAL OF THE NEUROLOGICAL SCIENCES, vol. 176, no. 2, 15 June 2000 (2000-06-15), pages 124-127, XP001147413 ISSN: 0022-510X * page 125, 2. Materials and methods *	1-8
A	SOHN Y R ET AL: "Activity of a crude extract formulation in experimental hepatic amoebiasis and in immunomodulation studies" JOURNAL OF ETHNOPHARMACOLOGY, ELSEVIER SCIENTIFIC PUBLISHERS LTD, IE, vol. 54, no. 2-3, 1996, pages 119-124, XP002219680 ISSN: 0378-8741 2. Materials and methods abstract	1-8

INTERNATIONAL SEARCH REPORT

tional application No.
PCT/IB 02/05558

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Present claim 1 relates to the following plant extracts: Sida sps., Boerhaavia diffusa, Vitis vinifera, Tinospora cordifolia, Withania somnifera.
However, the independent claim 9 refers to different plants (Phyllanthus sps., Glycyrrhiza glabra, Boerhaavia diffusa, Vitis vinifera, Tinospora cordifolia, Withania somnifera).

Moroever, claim 11 refers back to claim 9 defining the percentage ratio of several herbs. However, the herbs of claim 11 are different to those of claim 9.

These inconcistencies lead to a lack of clarity (and/or conciseness) within the meaning of Article 6 PCT to such an extent as to render a meaningful search of claims 9-10,12-16 impossible. Consequently, claims 9-10,12-16 have been searched incompletely.

The search has been carried out for those parts of the application which do appear to be clear (and/or concise), namely the combination of the five herbs Sida sps., Boerhaavia diffusa, Vitis vinifera, Tinospora cordifolia and Withania somnifera and a method for its preparation.

The herbs Phyllantus sps. and Glycyrrhiza glabra were not searched because of the inconcistency between claim 1 and 9 and 11 leading to a lack of clarity within the meaning of Article 6 PCT. Claim 9 seems to refer to a plant composition according to claim 11. Thus, the mixture of herbs according to claim 1 and 11 were searched.

Moreover, a mixture of less than 5 herbs lacks support within the meaning of Article 6 PCT since examples 1-8 only refer to a combination of all 5 herbs.

The applicant's attention is drawn to the fact that combinations of only two different herbs would result in a lack of unity since the application would refer to many different herbal compositions, each of them representing a single general inventive concept (Rule 13.1 PCT).

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

Inte al Application No
PC I/IB 02/05558

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